ANNUAL REPORT

ON THE

SANITARY CONDITION

OF THE

Runcorn Rural District,

DURING THE YEAR

1909,

BY

JOSEPH ADAMS, M.B., C.M., &C.,

MEDICAL OFFICER OF HEALTH.

Area of District	49,309 Acres
Census Population, 1901	23,203
Population. Estimated to middle of 1909 ...	25,721

"If we had a perfect knowledge of the laws of life, and could "practically apply this knowledge in a perfect system of hygienic rules, "disease would be impossible."

"Whether the world is ever to see such a consummation, no man "can say, but, as ages roll on, hope does, in some measure grow. In the "midst of all our many weaknesses, and all our many errors, we are "certainly gaining knowledge :—and that knowledge tells us, in no "doubtful terms, that the fate of man is in his own hands."

—PARKES, *Practical Hygiene.*

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ANNUAL REPORT.

To the Chairman and Councillors of the Runcorn Rural District Council

Mr. Chairman and Gentlemen,

I have the honour to present for your consideration my Annual Report on the sanitary condition of the Rural District of the Runcorn Union during the year 1909.

My Report is based, as on former occasions, upon the General Order of the Local Government Board of March 1880, relating to Annual Reports of Medical Officers of Health, in which the subject matter of such Reports is classified and arranged under the following Sections, viz;—

Section I,—Tabular Statistics of the Sicknes and Mortality within the District, classified according to diseases., Ages and Localities.

Section II.—A summary of the action taken during the year for preventing the spread of disease.—

Section III.—An account of the Sanitary Condition of the District at the end of the year.—

Section IV.—An account of the inquiries made by the Medical Officer of Health, as to conditions injurious to health within the district; and of proceedings which have been taken, or advised upon, under any statutes.—

Section V.—An account of the supervision exercised by him or on his advice, for sanitary purposes, over places and houses which the District Council have power to regulate—and lastly.—

Section VI.—A record of the action taken by him, or on his advice, in regard to offensive trades, and to factories and workshops—as well as to dairies, cowsheds, and milkshops.

SECTION 1.

VITAL STATISTICS.

AN ACCOUNT OF THE SICKNESS AND MORTALITY WITHIN THE DISTRICT, WITH TABULAR STATEMENTS APPENDED, AND CLASSIFIED ACCORDING TO DISEASES, AGES, AND LOCALITIES.

The Statistical figures relating to this Section are clearly summarised in the Tables appended to this Report, and which are drawn up in accordance with instructions from the Local Government Board. These Tables should be carefully perused by all who are anxious to be acquanted with the Vital Statistics of the District with which they are officially connected.

The contents of these Tables are briefly hereinunder set out ; viz.—

TABLE I.—This Table contains the gross totals of Vital Statistics for 1909 and, for purposes of comparison, the figures for the preceeding ten years are given. The Table gives, in columns numbered from left to right. (2) the population estimated to the middle of each year ; (3) the number of births,—and (4) the birth-rate for each year; (5) the number of deaths under one year of age. with (6) the death rate per 1000 of registered births ; (7) the total deaths registered within the District, together with, (8) the death rate per 1000 of estimated population ; (9) the deaths in public institutions within the District ; (10) the deaths of "*Non-Residents*" in public institutions within the District ; (11) the deaths of "*Residents*" in public institutions beyond the District ;—(12) the *nett*, or corrected total of deaths, belonging only to the District, with, finally (13) the *death-rate* per 1000 of estimated population.

TABLE II.—This Table sets out statistical calculations for (a) the Whole District, and for (b) the three Registration Sub-Districts, of the following facts;—(1) of the population estimated to the middle of each of the preceeding ten years; (2) of the births registered in each year; (3) of the deaths at all ages: (4) of the number of deaths under *one year* of age;—with (5) the same statistical observations for 1909 set out at the foot of the Table.

TABLE III.—This refers only to the year 1909 and presents a condensed summary of all cases of *Notifiable* Infectious diseases which have been notified to me during the year, and these I have classified according to Registration Sub-Districts, with the names of the individual townships which have been invaded by infectious diseases.

TABLE IV.—This is the main Mortality Table, in which are set out *all* the deaths occuring within the District: the causes of death are given, and the total deaths occurring within the District are classified according to diseases, ages, and localities.

TABLE V.—This Table is a very useful statement of the serious facts of Infantile Mortality, from stated causes, in weeks and months, of deaths in children under one year of age.

I have treated the tables referred to under 3 heads viz;—

1.—General Statistics;—

2.—Zymotic Mortality;

3.—Other diseases worthy of notice;

1. GENERAL STATISTICS.

The Runcorn Rural District comprises the whole of the Runcorn Union, with the exception of Runcorn Urban District, and it consists of 40 Townships.

The District area contains 49,309 acres.

At the *1891* census, the population was 24,665.

At the *1901* census, the population was 23,203.

I estimate the population, to the middle of 1909, to be about 25,721.

In making this estimate, during this decade, I am relying chiefly on excess of births over deaths, coupled with any extraneous factor which may temporarily disturb our normal rate of increase, to lead me to a correct estimate of population each year.

The area of the Runcorn Rural District Council is divided into three Registration Sub-Districts, as follows;

(1) Runcorn Sub-District.—Superficial area 9,034 acres; population estimated to the middle of 1909 to be about 5127.

It comprises the following Townships :—Aston, Aston Grange, Clifton, Halton, Norton, Stockham, Sutton, and Weston, (including Weston Point.)

(2) Frodsham Sub-District.—Superficial area 15,727 acres; population estimated to the middle of 1909 to be about 9417,

It comprises the following Townships :—Alvanley, Frodsham, Frodsham Lordship, Helsby, Kingsley, Kingswood, Manley, Newton-by-Frodsham, and Norley.

(3) Budworth Sub-District.—Superficial area 24,530 acres, population estimated to the middle of 1909 to be about 11177.

It comprises the following Townships ;—Acton Grange Antrobus, Appleton, Bartington Budworth, Crowley, Daresbury, Dutton, Hatton, Keckwick, Moore, Newton-by-Daresbury, Preston-o-th'-Hill, Seven Oaks, Stockton Heath, Stretton, Walton Inferior, Walton Superior, Whitley Inferior, Whitley Superior, and the three added Townships of Grappenhall, Latchford Without, and Thelwall.

During the year 1909, 691 births, and 328 deaths, were registered as having occurred within the district—compared with an average for the preceding ten years, of 638 births and 347 deaths—(for details, please refer to Table 1 in Appendices).

This gross total of 328 deaths in your District includes 18 deaths occurring in persons belonging to the Runcorn Urban District, and which occurred in the Union Workhouse or Hospital, at Dutton ; these 18 deaths must therefore be deducted from your total, as not belonging to your district.

Further, there were 6 deaths from Consumption, or Tubercle of Lungs, or other Tuberculous disease, which occurred at the Manchester Sanatorium at Kingswood; and these 6 deaths from Tubercular disease belong to Manchester and districts adjoining, and must therefore be deducted from your total as not belonging to your district.

Again, two deaths occurred at Acton Grange, one man being "found drowned" and another was killed by "collision with a bicycle" and these 2 deaths belong to Warrington, and must therefore be deducted from your total, bringing your gross total down to 302. To these, however must now be added 4 deaths of "residents" belonging to your District which occurred in public institutions outside your District, namely, one in Liverpool Royal Infirmary, one in Liverpool Royal Southern Hospital, one in Victoria Infirmary, Northwich, and one in the Warrington Infirmary Adding these 4 deaths to the previous correction of 302 deaths we get finally a *corrected, or nett* total of 306 deaths, as belonging to the Runcorn Rural District during 1909.

This corrected total of 306 deaths is 19 less deaths that in 1908, and is 27 below the average deaths for the preceding ten years.

When births and deaths for 1909 are compared with the averages of the preceding ten years, it will be observed that there is an *increase* of about 53 births, with a decrease of 19 deaths. From the population point of view, this is distinctly satisfactory. The births have increased and the deaths have decreased.

Out of this corrected total of 306 deaths belonging to Runcorn Rural District alone 8 were "uncertified" and 33 formed the subjects of Coroner's inquiries.

The causes of death, as ascertained at Coroner's inquests, were, briefly, as follows :—

Accidentally killed	5
Found drowned	7
Accidentally smothered	1
Disease of Heart	6
Convulsions	1
Urœmic Convulsions	1
Malnutrition...	1
Cold and Exposure	1
Pneumonia	2
Burns and Scalds	3
Suicide by drowning	2
„ by hanging	1
„ by shooting	1
„ by cutting throat	1
	33

Of the 691 births, 359 were males, and 332 were females they were distributed as follows :—

Runcorn Sub-District ...	74 males...	56 females
Frodsham Sub-District ...	134 males	127 females
Budworth Sub-D strict ...	151 males	149 females
Total...	359 males	332 females

Of the gross total of 328 registered deaths 180 were males, and 148 were females.

The birth rate for the whole District during the year 1909 was at the rate of 26 8 per 1000 per annum of estimated populatiou, being at a rate of 0·3 *more* than the average of the preceding ten years.

The death-rate for the whole District during the year 1909 was at the rate of 11·9 per 1000 per annum of estimated population, calculated on the *nett* total of 306 deaths; this death-rate is 1·9 below the average of the preceding ten years.

The *total registered* deaths were distrbuted as follows :—

Runcorn Sub-District ...	20 males ...	19 females
Frodsham Sub-District ...	62 males ...	58 females
Budworth Sub-District ...	98 males ..	71 females
Total	180 males	148 females

Of these deaths 50 occurred in children *under one year of age*, (see Appendix V on Infantile Mortality) with a death rate of 72·3 per 1000 of registered births, (not of estimated population) as compared with the previous rate of 93·2 per 1000 registered births during 1908 and an average of 114·0 per 1000 registered births for the preceding ten years.

The rate of Infantile Mortality in 1909 is thus seen to compare very favourably with that in 1908. There is still a great improvement on the records of 9 or 10 years ago, for in 1899 the death rate among infants under one year of age, was 136·4 per 1000 of registered births, compared with only 72·3 per 1000 in 1909, showing a decrease of 64·1 per 1000. This great saving of infant life is a most satisfactory result of the dissemination of more accurate and scientific knowledge in the care and rearing of infants, and is evidence of a widely awakening interest in so important a matter, on the part of the general public. and especially of the mothers.

"The facts in reference to Infantile Mortality are summarised in Table V in appendices. An examination of this Table will show you that these 50 deaths contain little by way of reproach, and were chiefly due to perfectly natural causes; there was only one child suffocated by the mother "overlying" it 11 children died through Premature Birth, 7 from Convulsions, 13 from wasting diseases, 1 from Tuberculous Disease, 9 from Bronchitis and Pneumonia, 2 from Infectious Diseases (of which 1 was due to Whooping Cough, and one to measles), and the remaining 6 from various other causes.

There were no deaths among the illegitimate children, and the number of illegitimate births was 25, as compared with 9 in the preceding year.

Of the remaining deaths, occurring in persons over one year of age, the incidence, in regard to age, was distributed as follows:—

23 deaths occurred between 1 and 5 years of age.
14 deaths occurred between 5 and 15 years of age.
15 deaths occurred between 15 and 25 years of age.
102 deaths occurred between 25 and 65 years of age.
102 deaths occurred between 65 years and upwards.

B. *Zymotic Mortality.*

The total number of cases of Infectious Diseases notified during 1909 was 198 and were caused by the following diseases :—

Diphtheria and Membranous Croup ...	37 cases
Erysipelas	18 ,,
Scarlet Fever	138 ,,
Typhoid (Enteric) Fever	4 ,,
Puerperal Fever	1 ,,
TOTAL ...	198

The necessary action taken by me and your inspector in dealing with these outbreaks, is condensed in the Tabular Summary immediately following these observations.

From all these notified cases, and from a few other zymotic diseases which are not notifiable, the following deaths occurred, viz.,—from

Smallpox...	no deaths
Measles	3 ,,
Scarlet Fever	3 ,,
Whooping Cough	3 ,,
Diphtheria, including Membranous Croup	5 ,,
Typhoid Fever	1 ,,
Influenza	6 ,,
Diarrhœa and Enteritis	2 ,,
Erysipelas	no ,,
Other Septic Diseases	1 ,,
Total	24 deaths

Measles was fairly prevalent over the District in 1909 but only accounted for 3 deaths. This was accompanied by a general prevalence of whooping cough, from which 3 deaths occurred.

Scarlet Fever accounted for 3 deaths out of 138 cases, of which 2 occurred in the Isolation Hospital at Dutton. The death rate from this disease has fa len considerably, being 2·1 per cent. Last year 8 deaths occurred in 145 cases, or 5·5 per cent, in 1907, 3 deaths occurred in 105 cases or 2·8 per cent, and in the previous year, 1906, not a single death occurred out of 179 cases which were notified to me.

Tphoid Fever caused 1 death, 4 cases were notified and and 1 removed to Isolation Hospital, which died.

Diphtheria has again been prevalent, 37 cases having been notified, and resulting in 5 deaths, or a death-rate of 13·5 per cent of cases notified. Last year 44 cases were notified and 6 deaths occurred, with a death-rate of 13·6 per cent of cases notified; thus 1909 is better than 1908, but the marked prevalence of this disease is unsatisfactory, and is difficult to explain, except on the ground of personal infection, through school, or otherwise, the premises attacked seldom containing sanitary defects, and both milk and water supplies being satisfactory. I shall later on recur to this subject.

C. *Other diseases or groups of diseases, worthy of notice*, are the following.

(a) Phthisis; (tubercle of lungs)—causing 10 deaths, of which 1 occurred in persons between 5 and 15 years of age:—2 between 15 and 25 years of age:—7 between 25 and 65 years of age.

(b) Other tuberculous diseases:—causing 8 deaths, of which 1 occurred in infants under one year of age:—2 between 1 and 5 years of age:—1 between 5 and 15 years of age:—3 between 25 and 65 years of age:—and 1 in persons over 65 years of age.

(c) Cancer; malignant disease:—causing 14 deaths of which 10 occurred between 25 and 65 years of age:—and 4 in persons over 65 years of age.

(d) Bronchitis:—causing 32 deaths, of which 7 occurred in infants under one year of age:—3 between 1 and 5 years of age:—9 between 25 and 65 years of age: and 13 in persons of 65 years of age and upwards.

(*e*) *Pneumonia* :—causing 20 deaths :—of which 2 occurred in infants under one year of age ;—5 between 1 and 5 years of age :—2 between 5 and 15 years of age ;—8 between 25 and 65 years of age :—and 3 in persons of 65 years of age and upwards.

(*f*) *Pleurisy* :—no deaths occurred.

(*g*) *Other diseases of the respiratory organs* :—causing 1 death, in a person between 25 and 65 years of age.

(*h*) *Alcoholism* :—no deaths occurred.

(*i*) *Venereal diseases* :—no deaths occurred.

(*j*) *Premature Birth* :—11 deaths occurred.

(*k*) *Diseases and accidents of parturition* :—3 deaths occurred.

(*l*) *Heart Diseases* :—causing 32 deaths :—17 between 25 and 65 years of age :—and 15 persons of 65 yeart of age and upwards.

(*m*) *Accidents* :—causing 14 deaths :—of which 2 occurred in infants under one year of age :—4 between 1 and 5 years of age :—2 between 5 and 15 years of age :—3 between 15 and 25 years of age :—2 between 25 and 65 years of age :—and 1 in persons of 65 years of age and upwards.

(*n*) *Suicides* :—Accounting for 5 deaths, 4 in persons between 25 and 65 years of age :—and 1 in persons of 65 years of age and upwards.

(*o*) *Deaths from all other causes* :—causing 130 deaths' of which 25 occurred in infants under one year of age :—2 between 1 and 5 years :—3 between 5 and 15 years of age : 5 between 15 and 25 years of age :—34 between 25 and 65 years of age :—and 61 in persons of 65 years of age and upwards.

The 198 cases of Infectious Diseases notified to me during 1909 are dealt with in the Tabular Summary now following.

TABULAR SUMMARY

OF

Outbreaks of Infectious Diseases

DURING THE YEAR 1908.

No.	Date	Disease	Locality	A. Source of Infection B. Action taken	A Extent of Outbreak B Result C Remarks
1	Jan.	Scarlet Fever	Frodsham Lordship	A Remainders from 1907 See Report for 1908. B Visited, and four cases were removed to Isolation Hospital. Premises were finally disinfected with formalin spray.	A. Two houses Five cases. B. No death
2	Jan.	Diphtheria	Clifton	A Source of scure. B Removed to Hospital; premises disinfected — No extension.	A. One house One case B. *One death*
3	Jan. to Oct.	Scarlet Fever	Stockton Heath	A Original source of infection traceable to cases in 1908. (See previous Annual Report). But several cases were alleged to be due to infection from Warrington; this is doubtful, in view of the general prevalence in the Township. B Visited, and such cases as could, or would, be removed to Hospital were removed; the epidemic extended to June, but sporadic cases occurred so late as October; final disinfection of all premises carried out.	A. 13 houses 16 cases B. No deaths

TABULAR SUMMARY.—Continued.

No	Date	Disease	Locality	A. Source of Infection B. Action taken	A. Extent of Outbreak B. Result C. Remarks
4	Jan.	Diphtheria	Walton Inferior	A Infection alleged to be due to removal of night-soil; doubtful. B Removal to Hospital declined: final disinfection of premises	A. One house One case B. No death
5	Jan. to Dec.	Scarlet Fever	Frodsham	A This outbreak was a continuation of the 1908 outbreak. About 12 cases occurred between Jan. and July, and after that, from August to December, 34 cases occurred. B Most cases were visited; and, out of the 46 cases occurring during the year, 23 were removed to Hospital; two cases terminating fatally in Hospital. Schools were closed and cases for which no Hospital accommodation was, at the time, available, were isolated as far as practicable; final disinfection of premises, bedding, clothing, &c., carried out in all cases.	A 36 houses 46 cases B. *2 deaths* in Hospital
6	Jan.	Diphtheria	Stretton	A No source of disease was ascertained. B All three cases were removed at once to Hospital, and premises, &c., disinfected.	A. Two houses Three cases B. No death
7	Jan.	Diphtheria	Halton	A No appreciable cause for disease found. B Visited; removal to Hospital declined; final disinfection carried out.	A. Two houses Three cases B. No death
8	Feb.	Scarlet Fever	Walton Inferior	A Infection attributed to adjoining outbreak (No. 3) Stockton Heath. B Visited; removal to Hospital declined; final disinfection carried out.	A. One house One case B. No death

TABULAR SUMMARY.—Continued.

No	Date	Disease	Locality	A. Source of Infection B. Action taken	A Extent of Outbreak B. Result C. Remarks
9	Feb.	Diphtheria	Frodsham	A No cause ascertained. B Visited; no bed available in Hospital; final disinfection.	A. Two houses Two cases B. No death
10	Feb.	Scarlet Fever	Appleton	A An extension from Stockton Heath. B Visited; removal declined; patient well isolated; final disinfection.	A. One house One case B. No death
11	Mar.	Scarlet Fever	Sutton	A Infection attributed to Aston School. B Visited; removal to Hospital declined; final disinfection carried out.	A. One house Two cases B. No Death
12	Mar.	Scarlet Fever	Grappenhall	A Source obscure, probably Warrington. B Visited; removal to Hospital declined; final disinfection carried out.	A. One house One case B. No death
13	Mar.	Diphtheria	Weston	A Source of disease not ascertained. B Visited; removal to Hospital declined; a very mild,—or doubtful, case; final disinfection.	A. One house One case B. No death
14	Mar.	Typhoid Fever	Halton	A The patient had visited an Aunt in Runcorn, who had suffered from Typhoid Fever, quite recently. B Visited — case doubtful; no evidence, to me, of the disease; no further action taken.	A. One house One case B. No death
15	April	Typhoid Fever.	Stretton	A Infection imported from Cornwall. B Removal to Hospital declined—the usual preventive measures adopted; this case occurred under the immediate medical and personal supervision of your Medical Officer to Isolation Hospital.	A. One house One case B. No death

TABULAR SUMMARY.—Continued.

No.	Date	Disease	Locality	A Source of Infection B Action taken	A Extent of Outbreak B Result C Remarks
16	April to Oct.	Scarlet Fever.	Moore	A Infection, probably, derived from Warrington, the patient having been there during the previous week. The next case occurred in July, and was alleged to be due to school attendance. I think the explanation of the whole outbreak resides in the "undiscovered cases" which, unrecognised—constitute 'foci" of infection for a large "school area." B Visited, frequently, affected houses; 6 out of the 13 cases were admitted to Hospital; all premises finally disinfected.	A. Seven houses 13 cases B. No death
17	April	Diphtheria	Moore	A Infection from Chester B Removed to ospital, and premises disinfected.	A One house. One case B No death
18	April	Scarlet Fever	Helsby	A An isolated case; was "peeling" before recognition B Visited; removal to Hospital declined. Final disinfection carried out.	A One house One case B No death
19	April	Diphtheria	Stockton Heath	A Source obscure. B Removal declined. Disinfection.	A One house One case B No death
20	May	Diphtheria	Grappenhall	A Source attributed to Warrington. B Visited; removal to Hospital, and premises disinfected. A doubtful case.	A One house One case B No death
21	June	Puerperal Fever	Weston	A Cause unknown. B Visited and directed the midwife, to present herself at the Isolation Hospital, with all her obstretric appliances, for personal disinfection: premises disinfected.	A One house One case B ~~No~~ death ONE

TABULAR SUMMARY.—Contin ed.

No	Date	Disease	Locality	A. Source of Infection B. Action taken.	A. Extent of Outbreak B. Result C. Remarks
22	June	Scarlet Fever	Alvanley	A Infection probably derived from Prescot through, a neighbour. B Visited : removal declined. Final disinfection.	C No extension A One house One case B No death
23	July to Sep.	Diphtheria	Frodsham	A Source unknown, in all of the cases, but Scarlet Fever was prevalent in the area. B Visited : the first case was removed at once to Hospital ; accommodation failed in reference to the other cases.	A 3 houses 3 cases B *One death* in hospital
24	July	Scarlet Fever	Alvanley	A Infection attributed to Frodsham. B Visited : no accommodation, Final disinfection.	A One house One case B No death
25	July	Scarlet Fever	Preston-o'-th'-Hill	A Source unknown. B Visited ; a severe case terminating fatally. The other recovered.	A One death Two cases B *On death*
26	July	Diphtheria	Manley	A A generally insanitary condition of premises. B Visited ; removal to H spital declined: made recommendations to your Council as to improvement of premises Final di in fection carried out.	A One house Three case B No death
27	July	Scarlet Fever	Weston	A Source unknown. B Visited : Each case was at once admitted to Hospital, and it may be inferred, that this accounts for no extension in so populous an area as Weston.	A Two houses and one canal boat B Three cases

TABULAR SUMMARY.—Continued.

No	Date	Disease	Locality	A. Source of Infection B. Action taken	A Extent of Outbreak B Result C Remarks
28	July	Typhoid Fever	Helsby	A Infection obscure. B Visited; no appreciable cause for disease, but the back premises are unsatisfactory, being on rising ground in rear of dwelling house. Removal to Hospital declined; the case terminated fatally, and premises finally disinfected.	A One house One case B *One death*
29	July	Diphtheria	Grappenhall	A Source of disease not ascertained. B Removed at once to Hospital, and premises disinfected.	A One house One case B No death
30	July	Scarlet Fever	Acton Grange	A School infection. B Patient removed to Hospital, and premises, bedding, clothing, &c., disinfected.	A One house One case B No death
31	July	Scarlet Fever	Norley	A An extension from the Frodsham outbreak. B No accommodation available. Premises, bedding &c disinfected.	A One house One case B No death
32	Aug.	Diphtheria	Appleton	A Source unknown. B Removed to Hospital and premises, bedding, &c., disinfected.	A One house One case B No death
33	Aug.	Scarlet Fever	Halton	A Source probably Runcorn. B Removed to Hospital and premises, bedding, &c., disinfected.	A One house One case B No death
34	Aug	Scarlet Fever	Budworth	A Source probably Northwich. B Removed to Hospital and premises disinfected.	A One house One case B No death

TABULAR SUMMARY.—Continued.

No	Date	Disease	Locality	A Source of Infection B Action taken	A. Extent of Outbreak B. Result C Remarks
35	Aug. to Dec.	Scarlet Fever	Frodsham	A A recrudescence of former outbreak. B Visited all patients and was able to take four out of seven cases into the hospital. All premises finally disinfected.	A Six houses Seven cases B No death
36	Sept.	Diphtheria	Sutton	A Source unknown. B Visited; removal declined. Final disinfection	A One house One case B No death
37	Sept.	Scarlet Fever	Stockton Heath	A Infection attributed to Warrington. B Visited: all cases for which accommodation was available were removed: final disinfection of premises carried out.	A Five houses Six cases B No death
83	Sept.	Diphtheria	Dutton	A Source unknown. B Removed to Hospital and premises, bedding, etc., disinfected.	A One house One case B No death
39	Oct.	Scarlet Fever	Newton-by-Daresbury	A Source of infection probably Daresbury. B Visited; one patient removed to Hospital; removal declined in other case. Final disinfection carried out.	A Two houses Two cases B No death
40	Oct.	Scarlet Fever	Daresbury	A Infection as in No. 39. B Visited; patient removed to Hospital: final disinfection carried out an extension to School-house led to closure of schools, pending school disinfection	A Two houses Three cases B No death.

TABULAR SUMMARY.—Continued.

No	Date	Disease	Locality	A Source of Infection B. Action taken	A. Extent of Outbreak B. Result C. Remarks
4	Oct.	Diphtheria	Kingsley	A An imported case, the patient, a nurse, came home from Ancoats Hospital where she had nursed a diphtheria patient. B Visited; removal declined; final disinfection carried out.	
42	Oct.	Diphtheria	Frodsham Lordship	A No appreciable cause of disease B Visited; removal declined: disinfection of premises after death.	A. One house. One case. B. *One death.*
43	Oct.	Diphtheria	Norley	A Source unknown. B Visited; a milk farm, regulations observed, removal declined; one death occurred, and final disinfection carried out.	A One house. Two cases. B. *One death.*
44	Nov.	Typhoid Fever	Moore	A Source obscure. B Visited; removed to Hospital, and final disinfection carried out.	A. One house. One case. B. No death.
45	Nov.	Diphtheria	Helsby	A Source not known; an isolated case. B Usual preventure measures taken, and final disinfection carried out.	A. One house. One case. B. No death.
46	Nov	Diphtheria	Halton	A Scarlet fever was in the house at the same time (outbreak 33). B Visited: no bed available: final disinfection.	A. One house. One case. B. No death.
47	Nov.	Scarlet Fever	Kingsley	A Source Frodsham. B Usual measures taken; final disinfection.	A. One house. One case. B. No death.
48	Nov.	Scarlet Fever	Hatton	A Infection from Darssbury school area, B Removed to Hospital and final disinfection carried out.	A. One house. One case. B. No death.

TABULAR SUMMARY.—Continued.

No.	Date	Disease	Locality	A. Source of Infection B. Action taken	A. Extentof Outbreak B. Result C. Remarks
49	Dec.	Diph. the ia.	Grappen hall.	A Cause not ascertained. B Removal to Hospital declined, isolation being efficient-final disinfection of premises &c.	A. One house. One case. B. No death.
50	Dec.	Scarlet Fever.	Stretton.	A Infection from outside district. B Removal declined; final disinfection carried out.	A. One house, One case. B. No death.
51	Dec.	Scarlet Fever.	Sevenoaks	A Source attributed to Northwich. B Removal declined; final disinfection carried out.	A. One house. One case. B. No death.
52	Dec.	Scarlet Fever.	Helsby.	A Infection distinctly derived from Runcorn. The first case was the commencement of a serious outbreak which extended well into the next year. B Visited; no beds available all usual preventive measures adopted, through the entire outbreak and all remises, clothing, bedding &c, finally disinfected It was unfortunate that no beds were available, as cases arose, during 1909.	A. 5 houses. 5 cases. B. No deaths.
53	Dec.	Diph. theria	Kingsley.	A A mild case; cause not ascertained. B Usual preventive meas ures t ken, and final disinfection carried out.	A. One house. One case. B, No death.
54	Dec.	Scarlet Fever.	Frodsham,	A Source former cases in Frodsham. B Visited; removal declined.--final disinfection of premises bedding, clothing &c.	A. One house. One cas . B. No death.

Remarks on preceding Summary, and on Infectious Diseases during 1909.

The foregoing Summary contains the principal facts in connection with the 54 separate outbreaks of infectious diseases, which have occurred in 1909, out of the 40 Townships which constitute the area of your District Council. In addition, there were 18 cases of Erysipelas in 8 Townships, which are not included in the Summary, and which call for no comment here, no special sanitary proceedings having been undertaken in reference to them.

The total number of cases of Infectious Diseases notified during 1909 was 198 (being 25 less than in 1908). In Table III in Appendices will be found set out the various diseases and the Townships in which they occurred. In the following Table I have put down the numbers of cases in successive years, since the adoption of compulsory notification, viz :—

In 1891	...	108 cases	In 1901	...	124 cases
„ 1892	...	124 „	„ 1902	...	226 „
„ 1893	...	308 „	„ 1903	...	124 „
„ 1894	...	202 „	„ 1904	...	229 „
„ 1895	...	206 „	„ 1905	...	260 „
„ 1896	...	246 „	„ 1906	...	313 „
„ 1897	...	158 „	„ 1907	...	214 „
„ 1898	...	98 „	„ 1908	...	223 „
„ 1899	...	146 „	„ 1909	...	198 „
„ 1900	...	70 „			

The average number of cases during the preceding 18 years is 187; the number in 1909 is thus 11 above the average of the preceding 18 years.

I am afraid that, refering to my last year's observations in reference to the utility of the Isolation Hospital, the present year has falsified any hopes as to its present efficiency I consider it a matter for early consideration on your part, as to increase of your provision for dealing with infectious diseases.

The 198 notified cases consisted of the following diseases :—

Smallpox ...	0 cases	Scarlet Fever ...	138 cases
Diphtheria ..	37 „	Typhoid Fever ...	10 „
Erysipelas ...	18 „	Pueperal Fever ...	1 „
		Total	198 cases

In reference to the separate diseases, a few remarks will suffice :—

(*a*) *Smallpox :*—No case of this disease has occurred since 1905 ; but the Smallpox Hospital at Moore is kept in order, with its own separate Washington-Lyon steam disinfector, for any case that may arise.

(*b*) *Measles :*—This disease is not notifiable in your district, but it was fairly prevalent, although only 3 deaths occurred from it, and some schools were closed in consequence of epidemics.

(*c*) *Scarlet Fever :*—138 cases of this disease were notified, compare with 145 cases in 1908 and 105 in 1907. It accounted for 3 deaths. The chief outbreaks occurred in Frodsham (46 cases), Frodsham Lordship, (14 cases), Stockton Heath, (21 cases), Moore, (13 cases .

Altogether 55 cases of Scarlet Fever were treated in the Isolation Hospital, and 2 deaths occurred in Hospital ; the other death occurred in a patient who was treated at home. The disease appeared to be of a severe type, many very severe cases occurring, but ultimately recovering, in 1906, when 179 cases occurred, not a single death took place.

I append the number of cases and deaths, for the last 10 years, for purposes of comparison ;

In 1908,	145	cases,	8	deaths	In 1903,	45	cases, 1 deaths
„ 1907,	105	„	3	„	„ 1902,	57	„ 2 „
„ 1906,	179	„	0	„	„ 1901,	39	„ 1 „
„ 1905,	110	„	1	„	„ 1900,	33	„ 0 „
„ 1904,	101	„	0	„	„ 1899,	85	„ 6 „

Or, an average of 89·9 cases per annum, with 2·2 deaths for the preceding 10 years.

Below is a Table giving the various Townships in which the disease occurred, with the number of cases and deaths :—

	Locality.	No. of Cases.	No. of Deaths
Runcorn Sub-district	Halton	6	...
	Sutton	2	...
	Weston	6	...
Frodsham Sub-district	Alvanley	2	...
	Frodsham	46	2
	Frodsham Lordship	14	...
	Helsby	6	...
	Kingsley	1	...
	Norley	1	...
Budworth Sub-district	Acton Grange	1	...
	Appleton	1	...
	Bartington...	1	..
	Budworth	2	...
	Daresbury	4	...
	Grappenhall	2	...
	Hatton	1	...
	Moore	13	.
	Newton-by-Daresbury	2	...
	Preston-oth-Hill	3	1
	Sevenoaks	1	...
	Stockton Heath	21	...
	Stretton	1	...
	Whitley Inferior	1	...
	TOTALS ..	138	3

Details and particulars of these outbreaks are given in the Tabular Summary, together with the action taken and results.

(*d*) *Whooping Cough.* This disease is not notifiable in your district. It has however been very prevalent in 1909, and has caused 3 deaths. Concurrently with measles, it led to the closing of some Infants' Schools.

(*e*) *Diphtheria* :— This disease although not so prevalent as in the several preceding years, has occurred in 37 cases, and caused 5 deaths.

I append for the purpose of comparison, a statement of cases and deaths for the last 10 years :—

In 1908, 44 cases,	6 deaths	In 1903, 27 cases,	2 deaths
„ 1907, 79 „	13 „	„ 1902, 35 „	7 „
„ 1906, 84 „	3 „	„ 1901, 44 „	8 „
„ 1905, 49 „	5 „	„ 1900, 17 „	6 „
„ 1904, 50 „	8 „	„ 1899, 37 „	2 „

Or, an average of 46·6 cases, with 6·0 deaths, for the preceding 10 years. The number both of cases and deaths is very near the average.

Below is a Table giving the various Townships in which the disease has occurred, with the number of cases and deaths :—

	Locality	No of Cases	No. of Deaths.
Runcorn Sub-District	Clifton	1	1
	Halton	4	...
	Sutton	1	1
	Weston	1	...
Frodsham Sub-District	Frodsham	7	...
	Frodsham Lordship	2	1
	Helsby	1	...
	Kingsley	2	...
	Manley	3	.
	Norley	2	1
Budworth Sub-district	Appleton	1	...
	Dutton	1	...
	Grappenhall	4	...
	Latchford Without	1	...
	Moore	1	...
	Stockton Heath	1	...
	Stretton	3	1
	Walton Inferior	1	...
	TOTALS...	37	5

The deaths opposite Clifton and Sutton occurred in the Isolation Hospital, Dutton, and are shewn in Table IV as Budworth Sub-district, where the Hospital is situated.

It is to be hoped that the diminution of this disease as compared with previous years, will be maintained. No special insanitary conditions were present to account for it and school infection appeared to play a prominent part in the principal outbreaks. Most of the cases were distinctly specific, with diphtheritic membrane, and the ordinary accompaniments.

Anti-diphtheritic serum is supplied, free of cost, for poor patients, on application to me, but has not been greatly resorted to in the past year, probably because it is now so much easier to obtain than formerly.

(*f*) *Croup.* No cases were reported.

FEVERS

(*g*) *Typhus Fever.* No cases occurred.

(*h*) *Typhoid Fever.* (Enteric) only 4 cases of this disease were notified during 1909, 1 death occurred. This is distinctly satisfactory. The principal details of these outbreaks have been given in the preceding Tabular Summary, and no reason exists for special comment.

I give, for purposes of comparison, a Table showing the number of of cases and deaths for the preceding 10 years.

In 1908,	10	cases	0	deaths	
„ 1907,	6	„	0	„	
„ 1906,	16	„	6	„	
„ 1905,	17	„	3	„	
„ 1904,	10	„	3	„	
In 1903,	1	cases	0	deaths	
„ 1902,	13	„	4	„	
„ 1901,	27	„	4	„	
„ 1900,	15	„	4	„	
„ 1899,	14	„	3	„	

Or, an average of 12·9 cases, with 2·7 deaths, during the preceding ten years.

The various cases occurred in the following Townships: Helsby 1 :—Halton 1 :—Moore 1 :—Stretton 1.

(*i*) *other continued Fevers.* No cases were notified.

(*j*) *Epidemic Influenza.* Six deaths were registered as having occurred from this disease.

It was much in evidence, and, in several places, contributed to the necessity for the closing of Schools in conjunction with measles and mumps.

(*k*) *Cholera.* Nothing occurred.

(*l*) *Plague.* Nothing occurred.

(*m*) *Diarrhœa.* Only 1 death occurred from diarrhœal diseases. This is the lowest number of deaths from these diseases ever occurring in your district.

(*n*) *Enteritis.* 1 death occurred.

(*o*) *Puerperal Fever.* Only one case of this disease was notified, and terminated ~~in recovery~~ fatally. The usual action was taken in regard to the midwife, who with her bag and appliances, was disinfected at Isolation Hospital, Dutton.

(*p*) *Erysipelas.* 18 cases were notified; no deaths occurred.

(*q*) *Chicken Pox.* No information reached me as to the presence of this disease, but I saw a few cases when investigating School conditions.

(*r*) *Anthrax.* No cases in human beings occurred, and the cases in cattle which were notified to me by the Police Authorities, were dealt with in accordance with Police Regulations, and certified to me as having been so dealt with.

SECTION III.

AN ACCOUNT OF THE SANITARY CONDITION OF THE DISTRICT AT THE END OF THE YEAR 1909.

As Regards,—

(*a*) *Zymotic Diseases;*—A recrudescence of the Frodsham outbreak of Scarlet Fever took place, and led to extensions into adjoining Townships—The original case in the Helsby outbreak was imported—Eight townships out

of the 40 constituting your area, were affected by infectious diseases at the end of the year—At the same time, other Districts in the administrative County of Chester were equally unfortunate, there having apparently occurred a wave of infectious disease during this period.

The Isolation Hospital at Dutton has been working at full strength during the year. It is a question for your Council to consider,—to bring the accommodation of the Hospital up to the requirements defined by the local Government Board and the County Council,--and which were included in the original scheme. The failure of the Hospital in 1909 to accommodate patients desiring admission, is, I am sure, quite, opposed to the general good feeling of your Council on behalf of the interests of the Public Health and a reasonable extension of your present accommodation up to the standard I have suggested, will involve an outlay, slight in comparison with its possible benefits, and, I hope, of great utility to the population concerned.

(*b*) *General Hygenic Conditions.*

1 WATER SUPPLIES. I refer you to, and quote from, my Annual Report for 1903.

(a) For a rural area, your district is exceptionally well supplied from excellent public sources, derived partly from adjoining urban supplies, also from water works constructed within your own district.

These sources are five in number and are distributed over your forty Townships approximately, as follows :-

(*a*) *The Liverpool Vyrnwy* Water scheme supplies at present the Township of Sutton, and a portion of Aston, so much of Dutton as is available, including the Isolation Hospital, also portions of Preston Brook.

(*b*) The *Warrington Corporation* Water Works has extended its mains into your District so far as to supply the whole of Stockton Heath ; Walton Inferior, with the exception of a very few houses ; Walton Superior, Moore, a large portion of Acton Grange, the larger portion of Daresbury, Latchford Without, Thelwall, and a portion of Grappenhall : the remaining portion of Grappenhall is supplied by a private water works, belonging to the principal owner and erected at his own expense.

(*c*) The *Frodsham* and *Frodsham Lordship* Water Works supplies Frodsham and Frodsham Lordship, the latter Township including the hamlets of Overton, Five Crosses, Bradley, Netherton, and Woodhouses.

(*b*) The *Helsby* and District Water Company supply Helsby and Alvanley.

(*c*) *The Runcorn Urban District Council* afford an excellent water supply to the Townships of Weston, Halton, and adjoining Townships, through their adoption of the *Liverpool* Vyrnwy water scheme. Thus, the most important and populous portions of your District are supplied with excellent public water, while the absolutely rural localities are called upon to depend on the individual local water supplies chiefly derived from the casual pump or well.

(2) *Sewage disposal* :—Very little change has been reported to me since 1908, but such extensions and improvements as have been made, are working satisfactorily.

3. *Rivers Pollution* :—No special action has been required under this heading.

4. *Infectious Diseases Prevention* :—The foregoing Tabular Summary accounts for the principal work carried out during the year 1909 under this heading, I have referred you to your former action in reference to the accommodation of your Isolation Hospital, and have suggested to you an increase of your establishment.

During the year 1909, 69 cases were admitted to Hospital, as hereunder stated.

Scarlet Fever...	...55	cases.
Diphtheria ...	...12	,,
Typhoid Fever	... 1	,,
Erysiplas ...	... 1	,,
Total	...69	

Four deaths occurred in Hospital, two from Scarlet Fever and two from Diphtheria, during the year 1909.

5. DISINFECTION :—The method adopted for disinfection of premises after infectious diseases, is the Formalin Spray; all clothing, bedding &c, are removed to the disinfecting chamber at Dutton Isolation Hospital ; for the possibilities of a Small Pox outbreak the Washington Lyon disinfecting apparatus is maintained in a state of efficiency on the premises of the Small Pox Hospital at Moore,

In accordance with request from the

Cheshire County Council.

I append a

Tabular Summary of Sanitary work during 1909.

I. ADOPTIVE ACTS.

Are the following in force in your district?

1. Infectious Diseases Prevention Act. Yes.
2. Notification of Births Act. No.
3. Public Health Acts (Amendment) Act 1907. Yes. Sections in force. See list attached.
4. Other Adoptive Acts. Part 3 of Public Health Acts Amendment Act 1890, Infectious Diseases Notification Act.

II. BYE-LAWS.

Are the Bye-Laws in force relating to—

1. New Streets and Buildings. Yes, in certain parishes
2. Common Lodging Houses. Yes,
3. Slaughterhouses. Yes, in certain Parishes.
4. Houses let in lodgings. No.
5. Cleansing and Scavenging. Yes, in certain parishes
6. Offensive Trades. Yes, in certain parishes.
7. Tents, Vans, Sheds, &c. No.
8. Other matters.

Were any new Bye-laws adopted during 1909. Yes. Building Bye-laws for Parish of Stockton Heath.

III. WATER SUPPLY.

1. From what source derived. Liverpool (Vyrnwy) Warrington, Frodsham and Helsby Water Companies, otherwise private supplies.
2. Are any, and if so what, parts of your district still without a proper supply? Yes. Please refer to my Annual Reports for the last 15 years.
3. Any complaints as to action on lead. No.
4. Number of Samples analysed during 1909. 22.

5. Further developments required. See previous Annual Reports.

IV. SEWERAGE.

1. Specify any works carried out during 1909. Portion of Sewerage for the Parish of Halton commenced, but not completed during 1909.
2. Are any, and if so what, parts of your district still without a proper system of sewers. Only those parts of the district which are strictly Rural, and to which,—(with the exception of 3 Parishes,—for which a scheme is now in course of preparation,)—the council do not consider a scheme to be either requisite or applicable.

V. SEWAGE DISPOSAL.

1. On what system is sewage treated. See Annual Reports for past 20 years. Where a public water supply is laid on, the water-carriage system is advocated and pressed: where no public water supply is available, cesspools. and roofed or unroofed ashpit privies are common.
2. Have there been any complaints during 1909 as to to the outfall works? Not to my knowledge but the raising of the level of the Manchester Ship Canal may interfere with the legal rights of the District Council in reference to sewerage outfalls, wherever situated.
3. Any special action taken during 1909. None.

VI. SCAVENGING.

1. By whom is this carried out? Casually, in some areas, by contractor, but no consildated arrangements exist for the District.
2. With what frequency are the following scavenged.
 (a) Midden-privies. as occasion requires.
 (b) Dry Ashpits. ditto.
 (c) Pail Closets } Stockton Heath Parish under
 (d) Dustbins } weekly Contract. Remainder
 (e) Cesspools } of District as occasion requires

3. Is the present system in your opinion inadequate in any respect ? Generally good, no serious defects. but like most Rural Districts of this class, is being rapidly improved.

VII. DAIRIES, COWSHEDS AND MILKSHOPS.

1. Number of premises on Register at close of 1909 : Dairies, Cowsheds, and Milkshops. 192
2. Number of inspections of these made during 1909. To be reported in further detail in next year's Report.
3. Number of instances where notice has been served for defects. 4.
4. Number of instances where legal proceedings have been taken and results of same. Nil, but several recommendations have resulted in improvement, without legal action.
5. Are Regulations in force in the district under the Dairies, Cowsheds and Milkshops Order? Yes.

VIII. DWELLINGS.

1. Number of new houses built during 1909, 98.
2. Action taken in respect of overcrowding, 3 notices served, and complied with.
3. Action taken under Housing of the Working Classes Acts, nil.

IX. PREVENTION OF CONSUMPTION.

1. Any system of notification. Voluntary without recognised fees.
2. Any Sanitary Inspection of patients' houses. On request.
3. Any disinfection of ditto. No.
4. Any distribution of advice. No.
5. Any action *re* spitting. No.

(Signed) Joseph Adams.

Date. March, 1910.

The Public Health Acts Amendment Act, 1907

Under an Order of the Local Government Board, the undermentioned provisions will, on the 13th of this month, be in force in the whole or portions of the Council's area, as follows :—

FOR THE WHOLE AREA OF THE COUNCIL.

Part IV. The whole, except Section 61.
Part V. The whole.
Part X. Section 95.

WITHIN THE PARISHES OF FRODSHAM, HELSBY, STOCKTON HEATH, AND WALTON INFERIOR,

Part II. The whole, except Sections 18, 19 and 26.
Part III. The whole, except Sections 48, 50 and 51.

WITHIN THE PARISHES OF GRAPPENHALL, APPLETON AND LATCHFORD WITHOUT,

Part II. The whole, except Sections 18, 19 and 26.
Part III. The whole, except Sections 39, 40, 41, 42, 48, 50 and 51.

WITHIN THE PARISHES OF FRODSHAM LORDSHIP, HALTON AND WESTON,

Part II. The whole, except Sections 18, 19, 21 and 26
Part III. The whole, except Sections 47, 48, 50 and 51

Sept. 8th, 1909.

RUNCORN SUB-DISTRICT.

ASTON and ASTON GRANGE.

The Water Supply to Aston-Heath, Aston, is still indifferent and insufficient.

No infectious diseases occurred.

CLIFTON.

Some better system for dealing with the Sewage from the Rocksavage portion of the Parish, (which contains 34 houses) should be provided, this question is under consideration.

One case of diphtheria, with one death occurred.

HALTON.

The Sewerage Works are approaching completion.

Six cases of Scarlet Fever, with no death, and four cases of Diphtheria, no death, and one case of Typhoid Fever, no death, occurred.

NORTON.

No comment required.

No infectious diseases occurred.

STOCKHAM.

No comment required.

No infectious diseases occurred.

SUTTON.

No comment required.

Two cases of Scarlet Fever, with no death, occurred.

One case of Diphtheria, with one death, occurred.

WESTON.

Progress is being made with regard to the question of dealing with night-soil and house refuse,—Some good work has been effected at Weston Point under the Private Street Works Act.

Six cases of Scarlet Fever, with no death, 1 case of Diphtheria, no death, and 1 case of Puerperal Fever, no death, occurred.

FRODSHAM SUB-DISTRICT.

ALVANLEY.

The question of an improved water supply to this parish has not yet been considered :—

Two cases of Scarlet Fever, no death occurred.

FRODSHAM.

The work of carrying out the alteration of the Sewer out-fall is nearing completion.

46 Cases of Scarlet Fever, with 2 deaths, and 7 cases of Diphtheria, with no death occurred.

FRODSHAM LORDSHIP.

No comment required :—

14 cases of Scarlet Fever, no death, and 2 cases of Diphtheria, one death occurred.

HELSBY.

A serious outbreak of Scarlet Fever occurred : the first case was reported from Runcorn.

6 cases of Scarlet Fever, 1 of Diphtheria, with no death, and 1 of Typhoid Fever, one death occurred.

KINGSLEY.

No comment required.

One case of Scarlet Fever and 2 cases of Diphtheria, no death occurred.

KINGSWOOD.

No comment required.

No infectious diseases occurred.

MANLEY.

No comment required.

3 cases of Diphtheria, no death occurred.

NEWTON-BY-FRODSHAM.

No comment required.

No infectious diseases occurred.

NORLEY.

Only a few houses on the lines of water mains remain unconnected therewith.

One case of Scarlet Fever, no death, and two cases of Diphtheria, with one death, occurred.

BUDWORTH SUB-DISTRICT.

ACTON GRANGE.

No comment required.

One case of Scarlet Fever, no death occurred.

APPLETON.

No comment required.

One case of Scarlet Fever, one case of Diphtheria, no death occurred.

DUTTON.

No comment required.

One case of Diphtheria, no death occurred.

GRAPPENHALL.

A Sewerage Scheme is being propounded for this Parish.

2 cases of Scarlet Fever, and 4 cases of Diphtheria, no death occurred.

LATCHFORD WITHOUT.

No comment required.

1 case of Diphtheria, no death occurred.

HATTON.

Water Mains have been extended to the Village portion of this Parish, a distinctly needed improvement.

1 case of Scarlet Fever, with no death.

KECKWICK.

No comment required.

No infectious diseases occurred.

MOORE.

I am not aware of any action having been undertaken in reference to complaints concerning sewerage arrangements.

13 cases of Scarlet Fever, no death, 1 case of Diphtheria no death, 1 case of Enteric Fever, no death occurred.

NEWTON-BY-DARESBURY.

No comment required.

2 cases of Scarlet Fever, no death occurred.

PRESTON-O'-TH-HILL.

No comment required.

3 cases of Scarlet Fever, one death occurred.

STOCKTON HEATH.

Considerable extensions of residential property, and laying down of new streets, have taken place.

21 cases of Scarlet Fever, with no death, and 1 case of Diphtheria, with no death occurred.

STRETTON.

No comment required.

1 case of Scarlet Fever, no death, 3 cases of Diphtheria one death, and 1 case of Enteric Fever, no death, occurred.

THELWALL.

No comment required.

No infectious diseases occurred.

WALTON INFERIOR.

No comment required.

1 case of Scarlet Fever, 1 case of Diphtheria, no death occurred.

WALTON SUPERIOR.

No comment required.

No infectious diseases occurred.

WHITLEY INFERIOR.

No comment required.

No infectious diseases occurred.

WHITLEY SUPERIOR.

No comment required.

No infectious diseases occurred.

CROWLEY.

No comment required.

No infectious diseases occurred.

SEVEN OAKS, BARTINGTON, and DARESBURY.

No comment required.

6 cases of Scarlet Fever, no death, occurred.

SECTION IV.

AN ACCOUNT OF ENQUIRIES MADE BY THE MEDICAL OFFICER OF HEALTH, AS TO CONDITIONS INJURIOUS TO HEALTH WITHIN THE DISTRICT, AND OF PROCEEDINGS WHICH HAVE BEEN TAKEN, OR ADVISED UPON, UNDER ANY STATUTES.

I have discussed practically all the action undertaken by me in preceding Sections of my Report,

I furnish further a Tabulated Statement of the work carried out by your Sanitary Inspector, alike in conjunction with myself, and also on his own responsibility, under the following Statutes viz :—

The Public Health Act, 1875.

The Public Health (Water) Act, 1878;

The Contagious Diseases (Animals) Act 1878.

Tne Dairies, Cow Sheds, and Milk Shops Order, 1885;

And the Canal Boats Acts 1877 and 1884; also under any other acts relating to Public Health and — lastly, — under the Factories and Workshops Act 1901.

In Section III you will find a Table of information as to Sanitary Work requested by the County Council Medical Officer of Health.

"Statement of the Inspector of Nuisances &c of sanitary work done, and action taken by him relating to other matters during the year ending December 31st, 1909".

UNDER THE

PUBLIC HEALTH ACT, 1875, AND OTHER ACTS.

Total Number of		notices and other documents written and forwarded	495
,,	,,	reports by Inspector to District Council	78
,,	,,	reports to District Medical Officer of Health	4
,,	,,	reports to County Medical Officer of Health	7
,,	,,	occupied houses supplied with water from water mains...	11
,,	,,	occupied houses supplied with water from water mains during the past 24 years	1213
,,	,,	public pumps repaired...	1
,,	,,	public wells improved	1
,,	,,	private ,, ,, ...	1
,,	,,	rooms disinfected including 6 schools	177

Total Number of		rooms disinfected during the past 10 years	1395
,,	,,	lots of bedding removed and put through disinfector	50
,,	,,	lots of bedding removed and put through disinfector during the past 10 years	556
,,	,,	manhole covers to sewers improved ...	1
,,	,,	Ventilators to ,, ,, ...	2
,,	,,	,, erected ,, ,, ...	1
,,	,,	sewers improved	2
,,	,,	drainage connections to sewers ...	6
,,	,,	road-drain inlets trapped	4
,,	,,	sewage drainage to dwelling-houses improved	12
,,	,,	drainage to Farm-premises improved	1
,,	,,	overcrowding of houses abated ...	3
,,	,,	improvements of ventilation to houses	10
,,	,,	privies with roofed ash-pits converted into water closets...	7
,,	,,	privies with open ashpits improved ...	2
,,	,,	cesspool privies put upon the pail system	1
,,	,,	privies after notices being served ..	10
,,	,,	licenses granted to erect slaughter houses	1
,,	,,	slaughter house licenses granted ...	1
,,	,,	slaughter house licenses renewed ...	2
,,	,,	licenses granted to store petroleum ..	3
,,	,,	licenses granted to store carbide of calcium	1
,,	,,	licenses renewed to deal in game ..	1
,,	,,	certificates of registration for milk-selling granted	11
,,	,,	smoke nuisances abated	1
,,	,,	legal proceedings taken, and fines inflicted in chimney-firing cases ...	4

PUBLIC HEALTH (WATER) ACT, 1878.

Total Number of		Water Certificates granted by District Council during the year ending December 31st, 1909 ...	7
,,	,,	houses occupied under such certificates	15
,,	,,	ditto supplied with water from water-mains	15
,,	,,	ditto supplied with water from water-mains during the past 23 years ...	1267
,,	,,	certificates granted from June 3rd, 1879, to December 31st, 1909 ...	783

Total Number of		houses occupied under such certificates within the same period	1768
,,	,,	Samples of water collected and submitted to County Analyst for chemical analysis	22

CANAL BOATS ACTS, 1877 AND 1884.

Total number of		boats inspected during the year ending December 31st, 1909, whilst passing through the District ...	21
,,	,,	boats conforming with Acts and Regulations made thereunder	21
,,	,,	women with boats inspected	15
,,	,,	children between 5 and 12 years of age	10
,,	,,	,, 5 years of age and under ...	10
,,	,,	occupants of Boats removed to Isolation Hospital suffering from Infectious disease	2
,,	,,	boats detained for disinfection ...	1

CONTAGIOUS DISEASES (ANIMALS) ACT, 1878.
DAIRIES, COWSHEDS & MILKSHOPS ACT, 1885.

Total number of		persons registered to carry on the trade of cowkeepers and dairymen during the year ending December 31st, 1909, ...	11
,,	,,	persons on the register on the above-named date	181
,,	,,	notices served for alterations and improvements to be made to Cowsheds	4

(Signed),

JAMES FARRINGTON,

Inspector of Nuisances, Canal Boats, Dairies, Cowsheds, Milkshops, and Workshops,

THE COTTAGE,

ASTON,

Dated, March, 5th, 1910. VIA WARRINGTON.

SECTION V.

AN ACCOUNT OF THE SUPERVISION EXERCISED BY HIM, OR ON HIS ADVICE, FOR SANITARY PURPOSES, OVER HOUSES AND PLACES WHICH THE DISTRICT COUNCIL HAVE POWER TO REGULATE.

(1) Several cases of "overcrowding" have been brought to my notice, but the action in reference hereto will be dealt with in my next report.

(2) I have not been called upon to give evidence in 1909 with reference to any action at law.

(3) I have not been called upon to grant any certificate in reference to premises "unfit for human habitation."

(4) The customary inspections of Lodging Houses, Dairies, Cowsheds, Milkshops, etc., have been carried out; no legal action in reference thereto was undertaken.

(5) Three cases of Anthrax, in cattle, were notified during 1909, but no cases occurred in men. I desire to convey to your Council an official acknowledgement of the efficiency of the Police authorities within your district who carry out their duties in reference to Anthrax in cattle in a manner reflecting the greatest credit upon them, as I said last year, it is a thankless and disagreeable task.

SECTION VI.

A RECORD OF THE ACTION TAKEN BY HIM, OR ON HIS ADVICE IN REFERENCE TO OFFENSIVE TRADES, AND TO FACTORIES AND WORKSHOPS.

(1) A complaint in reference to an alleged offensive trade has been brought to my notice, it is at present under investigation. This investigation involving an examination of various commercial undertakings.

(2) In connection with the factories and Workshops Act 1901, the various establishments which are within your district have called for no legal action.

(3) The question of out-workers remains practically, as set forth in last years Report ; no insanitary conditions, in reference to their habitations have been ascertained.

(4) No underground Bake-houses are to be found within your District.

Appended to this Report are the Statistical Tables I II, III, IV, and V, as required by the Local Government Board.

A further appendix contains the 22 Analyses (see appendix VI), of Drinking Waters which have been submitted, to the County Analyst during the year 1909.

I have the honour to be,

Mr. Chairman and Gentlemen.

Your obedient servant,

JOSEPH ADAMS,

Medical Officer of Health.

WARRINGTON,

March, 1910.

TABLE I.

Vital Statistics of Whole District during 1909 and Previous Years.

RUNCORN RURAL DISTRICT.

Year.	Population estimated to Middle of each Year.	Births.		Total Deaths Registered in the District.				Total Deaths in Public Institutions in the District	Deaths of Non-residents registered in Public Institutions in the District	Deaths of Residents registered in Public Institutions beyond the District	Nett Deaths at all Ages belonging to the District.	
				Under 1 year of age.		At all ages.						
		Number	Rate*	Number	Rate per 1,000 Births registered	Number	Rate*				Number	Rate*
1	2	3	4	5	6	7	8	9	10	11	12	13
1899	23062	595	25·8	81	136·4	367	15·9	21	14	7	353	15·3
1900	23151	629	27·1	82	112·3	392	16·9	36	21	2	379	16·3
1901	23203	634	27·0	70	110·4	312	13·4	28	16	4	300	12·9
1902	23395	644	27·7	74	114·9	320	13·5	22	14	5	311	13·1
1903	23871	654	27·4	74	113·1	320	13·8	20	14	2	308	12·9
1904	24130	645	26·6	88	136·4	398	16·4	32	14	8	386	15·9
1905	24416	608	24·9	75	123·3	322	12·7	18	15	5	312	12·7
1906	24753	671	27·1	60	89·4	334	13·4	32	20	4	318	12·8
1907	25035	638	25·4	54	84·6	356	14·2	34	23	5	338	13·5
1908	25350	665	26·2	62	93·2	350	14·2	51	31	6	325	12·8
Averages for years 1899-1908	24056	638	26·5	72	114·0	347	14·4	29	18	4	333	13·8
1909	25721	691	26·8	50	72·3	328	12·9	37	26	4	306	11·9

*Rates in columns 4, 8 and 13, calculated per 1,000 of estimated population.

NOTE.—The deaths to be included in Column 7 of this table are the whole of those registered during the year as having actually occurred within the district or division. The deaths to be included in Column 12 are the number in Column 7, corrected by the subtraction of the number in Column 10 and the addition of the number in Column 11.

By the term "Non-residents" is meant persons brought into the district on account of sickness or infirmity, and dying in public institutions there; and by the term "Residents" is meant persons who have been taken out of the district on account of sickness or infirmity, and have died in public institutions elsewhere.

The "Public institutions" to be taken into account for the purposes of these Tables are those into which persons are habitually received on account of sickness or infirmity, such as hospitals, workhouses and lunatic asylums. A list of the institutions in respect of the deaths in which corrections have been made should be given on the back of this Table.

Area of District in acres (exclusive of area covered by water) } 49,309 acres.

Total population at all ages—23,203
Number of inhabited houses—4774
Average number of persons per house—4·9
} At Census of 1901

[See over.

I. Institutions within the District receiving sick and infirm persons from outside the District.	II. Institutions outside the District receiving sick and infirm persons from the District.	III. Other Institutions, the deaths in which have been distributed among the several localities in the District.
(1). UNION WORKHOUSE, DUTTON, in which 18 deaths occurred, belonging to Runcorn Urban District.	LIVERPOOL ROYAL INFIRMARY, in which 1 death occurred, belonging to this District.	ISOLATION HOSPITAL, DUTTON, in which 4 deaths occurred belonging to this District; cause of deaths, 2 Diphtheria, 2 Scarlet Fever.
(2). CROSSLEY SANATORIUM, KINGSWOOD, in which 6 deaths occurred, not belonging to this District.	LIVERPOOL ROYAL SOUTHERN HOSPITAL, in which one death occurred, belonging to this District.	
(3). In addition, one man belonging to Warrington, was "found drowned," and	VICTORIA INFIRMARY, NORTHWICH in which one death occurred, belonging to this District.	
(4). another man belonging to Warrington was killed by "collision with a bicycle."	WARRINGTON INFIRMARY, in which one death occurred, belonging to this District.	

Is the Union Workhouse within the District? Yes, at DUTTON.

TABLE II.

Vital Statistics of separate Localities in 1909 and previous years.

RUNCORN RURAL DISTRICT.

Names of Localities.	1.—The Whole District				2.—Runcorn Sub-district.				3.—Frodsham Sub-district.				4.—Budworth Sub-district.			
Year.	Population estimated to middle of each year.	Births registered.	Deaths at all Ages	Deaths under 1 year.	Population estimated to middle of each Year.	Births registered.	Deaths at all Ages	Deaths under 1 year.	Population estimated to middle of each Year.	Births registered.	Deaths at all Ages	Deaths under 1 year.	Population estimated to middle of each Year.	Births registered.	Deaths at all Ages	Deaths under 1 year.
	a.	*b.*	*c.*	*d.*	*a.*	*b.*	*c.*	*d.*	*a.*	*b.*	*c.*	*d.*	*a.*	*b.*	*c.*	*d.*
1899	23062	595	353	81	4704	129	58	11	8496	221	141	27	9862	245	168	43
1900	23151	629	379	82	46 8	125	79	26	8461	253	132	30	10062	251	181	26
1901	23203	634	300	70	4552	156	58	24	8427	247	114	23	10224	231	128	23
1902	23536	644	311	74	4624	132	60	11	8576	251	102	22	10336	261	149	39
1903	23871	654	308	74	4691	130	64	11	8709	242	108	31	10471	282	136	32
1904	24130	645	386	88	4757	133	74	16	8827	236	125	29	10546	276	187	43
1905	24416	608	322	75	4839	139	56	17	8948	244	123	31	10628	225	143	27
1906	24753	671	318	60	4905	125	59	16	9059	228	117	20	10788	318	158	24
1907	25035	638	338	54	4981	127	52	10	9178	224	100	17	10875	287	186	27
1908	25350	665	325	62	5046	119	55	13	9273	218	115	24	11032	328	155	25
Averages of Years 1899 to 1908.	24056	638	333	72	4772	131	61	15	8795	236	118	25	10482	270	159	31
1909	25721	691	306	50	5127	130	39	7	9417	261	116	24	11177	300	151	19

Notes.—*(a)* The separate localities adopted for this table should be areas of which the population are obtainable from the census returns, such as wards, parishes or groups of parishes, or registration sub-districts. Block 1 may, if desired, be used for the whole district; and blocks 2, 3, &c., for the several localities. In small districts without recognised divisions of known population this Table need not be filled up.

(b) Deaths of residents occurring in public institutions beyond the district are to be included in sub-columns *c* of this table, and those of non-residents registered in public institutions in the district excluded. (See note on Table I as to meaning of terms "resident" and "non-resident.")

(c) Deaths of residents occurring in public institutions, whether within or without the district, are to be allotted to the respective localities according to the addresses of the deceased.

(d) Care should be taken that the gross totals of the several columns in this Table respectively equal the corresponding totals for the whole districts in Tables I. and IV.; thus, the totals of sub-columns *a*, *b*, and *c* should agree with the figures for the year in the columns 2, 3. and 12, respectively, of Table 1.: the gross total of the sub-columns *c* should agree with the total of column 2 in Table IV., and the gross total of sub-columns *d* with the total of column 3 in Table IV.

TABLE III.

Cases of infectious Diseases notified during the Year, 1909.

THE WHOLE DISTRICT

NOTIFIABLE DISEASE.	CASES NOTIFIED IN WHOLE DISTRICT.							TOTAL CASES NOTIFIED IN EACH SUB-DISTRICT.			NUMBER OF CASES REMOVED TO HOSPITAL FROM EACH LOCALITY.																			
	At all Ages.	At Ages†—Years						RUNCORN.	FRODSHAM.	BUDWORTH.	ACTON GRANGE	APPLETON	BUDWORTH	CLIFTON	DARESBURY	DUTTON	FRODSHAM	FRODSHAM LORDSHIP	GRAPPENHALL	HALTON	HATTON	LATCHFORD WITHOUT	MOORE	NEWTON BY-DARESBURY	PRESTON-O'-HILL	STOCKTON HEATH	STRETTON	SUTTON	WESTON	TOTAL CASES REMOVED TO HOSPITAL.
		Under 1	1 to 5	5 to 15	15 to 25	25 to 65	65 and upwards																							
Smallpox	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	..	.	.	...	...	..	..	...	...	..	...	...	
Cholera	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	..	..	...	...	..	...	...	
Diphtheria including Membranous croup	37	...	4	20	10	3	...	7	17	13	...	1	...	1	...	1	1	...	2	...	..	1	1	...	..	...	3	1	...	12
Erysipelas	18	...	...	...	...	16	2	1	11	6	...	...	...	...	...	...	...	1	..	...	...	...	..	...	..	...	...	...	..	1
Scarlet fever	138	...	31	93	9	5	...	14	70	54	1	...	1	...	4	...	20	7	1	1	1	..	6	1	1	8	...	...	3	55
Typhus fever	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	.	...	...	..	..	..	...	...	...	...	..	...	...
Enteric Fever	4	...	...	1	1	2	...	1	1	2	...	...	...	...	...	...	...	..	..	...	.	...	1	.	...	...	...	...	..	1
Relapsing fever	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	..	...	...	...	...	..	.	..	..	...	...	..	...
Continued fever	...	...	...	..	...	...	...	...	...	...	...	...	...	...	...	..	...	..	..	..	...	.	..	.	...	...	..	...	..	...
Puerperal fever	1	...	...	...	1	..	...	1	...	..	..	...	...	...	...	..	..	..	..	..	..	...	..	...	...	...	..	..	..	...
Plague	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	..	..	..	..	..	..	...	...	...	..	...	..	...
Chicken pox	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	..	..	..	...	...	...	..	...	...	...
Anthrax	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	.	..	..	..	..	..	.		...	...	...	...	...
Totals	198		35	114	21	26	2	24	99	75	1	1	1	1	4	1	21	8	3	1	1	1	8	1	1	8	3	1	3	69

RUNCORN SUB-DISTRICT

NOTIFIABLE DISEASE.	CASES NOTIFIED IN WHOLE DISTRICT.							TOTAL CASES NOTIFIED IN EACH LOCALITY.								
	At all Ages.	At Ages†—Years						ASTON.	ASTON GRANGE.	CLIFTON.	HALTON.	NORTON.	STOCKHAM.	SUTTON.	WESTON.	
		Under 1	1 to 5	5 to 15	15 to 25	25 to 65	65 and upwards									
Small-pox	...	...	...	...	..	...	...	...	...	...	...	...	...	...	..	
Cholera	...	...	...	..	..	...	..	...	...	...	...	...	...	...	...	
Diphtheria including Membranous croup	7	...	1	3	3	...	...	...	...	1	4	...	...	1	1	
Erysipelas	1	...	...	...	..	1	..	.	.	...	...	...	...	...	1	
Scarlet fever	14	...	2	11	1	...	..	...	...	...	6	...	...	2	6	
Typhus fever	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
Enteric fever	1	..	...	1	...	...	...	...	...	...	1	...	...	...	...	
Relapsing fever	...	..	...	...	...	...	...	...	.	...	...	...	...	...	...	
Continued fever	...	..	...	...	...	...	...	...	...	...	...	...	...	...	..	
Puerperal fever	1	...	..	...	1	...	...	...	...	...	...	...	...	...	1	
Plague	...	.	...	...	...	..	...	...	...	...	...	...	...	...	...	
Chicken-pox	...	..	...	..	..	...	...	...	...	...	..	..	...	...	...	
Anthrax	...	..	..	..	...	...	..	...	...	...	...	..	...	...	...	
Totals	24	...	3	15	5	1	..	..		1	11	...	...	3	9	

FRODSHAM SUB-DISTRICT.

NOTIFIABLE DISEASE.	CASES NOTIFIED IN WHOLE DISTRICT.							TOTAL CASES NOTIFIED IN EACH LOCALITY.								
	At all Ages.	At Ages†—Years.						ALVANLEY.	FRODSHAM.	FRODSHAM LORDSHIP.	HELSBY.	KINGSLEY.	KINGSWOOD.	MANLEY.	NEWTON BY-FRODSHAM.	NORLEY.
		Under 1	1 to 5	5 to 15	15 to 25	25 to 65	65 and upwards									
Small-pox	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Cholera	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Diphtheria including Membranous croup	17	...	2	10	3	2	...	...	7	2	1	2	..	3	...	2
Erysipelas	11	...	...	...	...	10	1	...	5	4	...	1	...	...	...	1
Scarlet fever	70	...	13	50	3	4	...	2	45	14	6	1	...	...	...	1
Typhus fever	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Enteric fever	1	.	...	...	...	1	...	...	...	...	1	...	...	...	...	...
Relapsing fever	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Continued fever	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Puerperal fever	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Plague	...	..	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Chicken-pox	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Anthrax	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Totals	99	...	15	60	6	17	1	2	58	20	8	4	...	3	...	4

BUDWORTH SUB-DISTRICT:

NOTIFIABLE DISEASE.	CASES NOTIFIED IN WHOLE DISTRICT.							TOTAL CASES NOTIFIED IN EACH LOCALITY.																				
	At all Ages.	At Ages†—Years						ACTON GRANGE.	ANTROBUS.	APPLETON.	BUDWORTH.	DUTTON. W H	GRAPPENHALL.	LATCHFORD WITHOUT.	MOORE. H	NEWTON-BY-DARESBURY.	PRESTON-O'TH HILL.	STOCKTON HEATH	STRETTON.	THELWALL.	WALTON INFERIOR.	WALTON SUPERIOR.	WHITLEY SUPERIOR.	BARTINGTON. CROWLEY. DARESBURY. HATTON. KECKWICK. SEVENOAKS. WHITLEY INFERIOR.				
		Under 1	1 to 5	5 to 15	15 to 25	25 to 65	65 and upwards																					
Small-pox	...	...	...	...	...	...	...	...	...	...	...	...	..	...	...	...	...	...	...	...	...	...	..	...				
Cholera	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	..	...	...	...	...	...	...	...	...				
Diphtheria including Membranous croup	13	...	1	7	4	1	...	...	...	1	...	1	4	1	1	...	...	1	3	...	1	...	...	...				
Erysipelas	6	...	..	...	...	5	1	...	1	...	...	...	...	...	...	..	...	4	...	...	...	...	...	1				
Scarlet fever	54	...	16	32	5	1	...	1	...	1	2	...	2	...	13	2	3	21	1	...	1	...	...	7				
Typhus fever	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...				
Enteric fever	2	...	...	...	1	1	...	...	...	...	...	...	...	...	1	...	...	...	1	...	...	...	...	...				
Relapsing fever	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...				
Continued fever	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...				
Puerperal fever	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...				
Plague	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...				
Chicken-pox	...	...	..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...				
Anthrax	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...				
Totals	75	...	17	39	10	8	1	1	1	2	2	1	6	1	15	2	3	26	5	...	2	...	...	8				

NOTES.—The localities adopted for this table should be the same as those in Tables II. and IV.

State in space below the name of the Isolation Hospital, if any, to which residents in the District, suffering from infectious disease, are usually sent, and the accomodation, available for the district, afforded by it. Mark (H) the locality in which it is situated, or if not within the district, state where it is situated, and in what district. The name of the authority by whom the Hospital is provided should also be given. Mark (W) the locality in which a Workhouse is situated.

* This space may be used for record of other disease the notification (compulsory or voluntary) of which is in force in the District.

† These age columns for notifications should be filled up in all cases where the Medical Officer of Health, by inquiry or otherwise, has obtained the necessary information.

*** Column 8 should be filled up with the Totals of cases removed to Hospital, whether the District is divided into separate localities or is treated as one undivided area.

Isolation Hospital—Name and Situation—Moore. *Total available beds*—12. *No. of Diseases that can be concurrently treated*—Scarlet Fever, Typhoid Fever, Diphtheria.

Both provided by Runcorn Rural District Council.

TABLE IV.—*Causes of, and Ages at, Death during Year 1908*

Causes of Death.	THE WHOLE DISTRICT. Deaths at the subjoined ages of "Residents" whether occurring in or beyond the District.							Total Deaths whether of "Residents" or "Non-Residents" in Public Institutions in the District.	RUNCORN Sub-district. Deaths at the subjoined ages of "Residents" whether occurring in or beyond the District.							Total Deaths whether of "Residents" or "Non-Residents" in Public Institutions in the District	FRODSHAM Sub-district. Deaths at the subjoined ages of "Residents" whether occurring in or beyond the District.							Total Deaths whether of "Residents" or "Non-Residents" in Public Institutions in the District.	BUDWORTH Sub-district. Deaths at the subjoined ages of "Residents" whether occurring in or beyond the District							Total Deaths whether of "Residents" or "Non" Residents in Public Institutions in the District
	All ages.	Under 1 year	1 and under 5.	5 and under 15.	15 and under 25.	25 and under 65.	65 and upwards		All ages.	Under 1 year	1 and under 5.	5 and under 15.	15 and under 25.	25 and under 65.	65 and upwards.		All ages.	Under 1 year	1 and under 5.	5 and under 15.	15 and under 25.	25 and under 65.	65 and upwards.		All ages.	Under 1 year	1 and under 5.	5 and under 15.	15 and under 25.	25 and under 65.	65 and upwards.	
1	2	3	4	5	6	7	8	9	2	3	4	5	6	7	8	9	2	3	4	5	6	7	8	9	2	3	4	5	6	7	8	9
Small-pox	...	...	...	...	...	...	...	..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Measles	3	...	3	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	...	...	...	...	...	...	2	...	2	...	...	...	...	...
Scarlet fever	3	...	1	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3	...	1	2	...	...	...	...
Whooping-cough	3	1	2	...	...	...	...	...	1	...	1	...	...	...	...	...	1	1	...	...	...	...	...	...	1	...	1	...	...	...	...	.
Diphtheria (including membranous croup)	5	...	1	3	1	...	...	...	...	...	...	...	...	...	...	...	2	...	1	1	...	...	...	...	3	...	...	2	1	...	...	.
Croup	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Fever (Typhus	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Fever (Enteric	1	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...
Fever (Other continued	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Epidemic influenza	6	...	...	...	...	5	1	..	1	...	...	...	...	1	...	...	1	...	...	...	...	1	...	...	4	...	...	...	...	3	1	...
Cholera	...	...	...	..	...	...	...	...	...	...	...	...	...	...	...	..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	..	...
Plague	...	...	...	...	...	...	...	...	..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Diarrhœa (*See* notes at back.)	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	..
Enteritis. (*See* notes at back.)	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	..	...	1	...	...	..
Gastritis (*See* notes at back)	2	...	...	..	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...	...	...	2	...
Puerperal fever (*See* notes at back)	1	...	...	...	1	...	...	...	1	...	...	...	1	...	...	...	...	...	..	...	...	...	...	...	...	...	...	...	...	...	...	...
Erysipelas	...	...	...	...	...	...	...	..	...	...	...	...	...	...	...	..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Other septic diseases	...	...	...	...	...	...	...	...	...	...	...	...	..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	..
Phthisis. (Pulmonary tuberculosis)	10	...	...	1	2	7	...	7	1	...	...	1	...	...	...	...	6	...	...	...	1	5	...	6	3	...	...	...	1	2	1	1
Other tubercular diseases	8	1	2	1	...	3	1	1	1	...	1	...	...	...	...	...	3	1	...	...	...	2	...	...	4	...	1	1	...	1	...	1
Cancer, malignant disease (*See* notes at back)	14	..	...	...	...	10	4	1	2	..	...	...	...	1	1	...	8	...	...	...	...	5	3	...	4	...	...	...	...	4	...	1
Bronchitis	32	7	3	...	...	9	13	2	8	1	1	...	...	3	3	...	...	1	...	...	...	1	6	...	16	5	2	..	..	5	4	2
Pneumonia	20	2	5	2	...	8	3	1	4	1	1	...	...	2	...	...	3	.	1	1	...	1	...	...	13	1	3	1	...	5	3	1
Pleurisy	...	...	...	...	...	...	...	...	..	...	...	...	...	...	...	...	.	..	...	...	...	...	...	...	..	...	...	...	...	...	...	...
Other diseases of respiratory organs	1	...	...	...	...	1	...	...	...	..	...	...	...	...	...	...	1	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...
Alcoholism	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	..	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Cirrhosis of Liver	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	..	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Venereal diseases	..	...	...	...	...	...	...	.	...	...	...	...	...	...	...	...	6	6	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Premature birth	11	11	...	...	...	...	...	...	2	2	.	...	...	...	...	...	...	...	...	...	...	...	...	...	3	3	...	...	...	...	...	...
Diseases and accidents of parturition	3	...	...	..	2	1	...	...	..	...	...	..	...	...	...	...	1	...	...	...	...	1	...	...	2	...	...	...	2	...	...	...
Heart diseases	32	...	...	...	...	17	15	2	5	.	...	...	...	3	2	...	9	...	...	...	..	4	5	...	18	...	...	...	...	10	8	2
Accidents	14	...	4	2	3	2	1	3	3	...	2	1	...	...	...	...	1	1	..	...	...	...	...	...	9	..	2	1	3	2	1	3
Suicides	5	...	...	...	...	4	1	...	...	...	...	..	...	...	...	...	3	...	..	...	...	2	1	...	2	...	...	...	...	2	...	..
.....																																
.....																																
.....																																
.....																																
All other causes	130	25	2	3	5	34	61	18	10	3	...	1	...	4	2	...	60	13	1	1	4	10	31	.	61	10	1	1	1	20	28	18
All causes	306	50	23	14	15	102	102	35	39	7	6	3	1	14	8	..	116	24	4	3	5	34	46	6	151	19	13	8	9	54	48	29

See Notes at Back.

NOTES TO TABLES IV. AND V.

(*a*) In Table IV., all deaths of "Residents" occurring in public institutions, whether within or without the district, are to be *included* with the other deaths in the columns for the several age groups (columns 2-8). They are also, in columns 9-15, to be *included* among the deaths in their respective "Localities" according to the previous addresses of the deceased as given by the Registrars. Deaths of "Non-residents" occurring in public institutions in the district are in like manner to be *excluded* from columns 2-8 and 9-15 of Table IV.

(*b*) *See* notes on Table I. as to the meaning of "Residents" and "Non-residents," and as to the "Public institutions" to be taken into account for the purposes of these Tables. The "Localities" in Table IV. should be the same as those in Tables II. and III.

(*c*) All deaths occurring in public institutions situated within the district, whether of "Residents" or of "Non-residents," are, in addition to being dealt with as in note (*a*), to be entered in the last column of Table IV. The total number in this column should equal the figures for the year in column 9, Table I.

(*d*) The total deaths in the several "Localities" in columns 9-15 of Table IV. should equal those for the year in the same localities in Table II., sub-columns c The total deaths at all ages in column 2 of Table IV should equal the gross total of columns 9-15, and the figures for the year in column 12 of Table I.

(*e*) Under the heading of "Diarrhœa" are to be included deaths registered as due to Epidemic diarrhœa, Epidemic enteritis, Infective enteritis, Zymotic enteritis, Summer diarrhœa, Dysentery and Dysenteric diarrhœa, Choleraic diarrhœa, Cholera (other than Asiatic or epidemic) and Cholera Nostras

Deaths from diarrhœa secondary to some other well-defined disease should be included under the latter.

Deaths from Enteritis, Muco-Enteritis, Gastro-Enteritis, and Gastritis (see under the heading Diarrhœal Diseases in Table V.) in Tables IV. and V. should be placed immediately below, but separately from, those enumerated under the heading Diarrhœa as defined by enumeration above. This is particularly important for deaths under one year of age, as many of the deaths in infancy returned as due to Enteritis are really caused by Epidemic Diarrhœa. In the course of years, by the adoption of this recommendation, it will be practicable to ascertain the probable amount of transfer between these different headings.

(*f*) Under the headings of "Cancer" and "Puerperal fever" should be included all registered deaths from causes comprised within these general terms. Thus: Under "Cancer" should be included deaths from Cancer, Carcinoma, Malignant disease, Scirrhus, Epithelioma, Sarcoma, Villous tumour, and Papilloma, of bladder Rodent ulcer. Under "Puerperal Fever" are to be included deaths from Pyæmia, Septicæmia, Sapræmia, Pelvic peritonitis, Peri and Endo-Metritis, occurring in the Puerperium.

(*g*) Under "Congenital Defects" in Table V. are to be included deaths from Atelectasis, Icterus neonatorum, Navel hæmorrhage, Malformations and Congenital hydrocephalus.

(*h*) Under "Tuberculous Meningitis" are to be included deaths from Acute hydrocephalus.

(*i*) Under "Other Tuberculous Diseases" are to be included deaths from Tuberculosis, Tuberculosis of bones, joints and other organs, Lupus and Scrofula.

(*j*) All deaths certified by registered Medical Practitioners and all Inquest cases are to be classed as "Certified"; all other deaths are to be regarded as "Uncertified."

In recording the facts under the various headings of Tables I., II., III., IV. and V., attention has been given to the notes on the Tables.

JOSEPH ADAMS, *Medical Officer of Health*,
January 17th, 1910.

TABLE V.

Infantile Mortality during the year 1909.

Deaths from stated Causes in Weeks and Months under One Year of Age.

(See Notes at back of Table IV)

RUNCORN RURAL DISTRICT.

CAUSE OF DEATH.		Under 1 Week.	1-2 Weeks.	2-3 Weeks.	3-4 Weeks.	Total under 1 Month.	1-2 Months.	2-3 Months.	3-4 Months.	4-5 Months.	5-6 Months.	6-7 Months.	7-8 Months.	8-9 Months.	9-10 Months.	10-11 Months.	11-12 Months.	Total Deaths under One Year.
All Causes.	Certified	11	7	4	2	24	6	5	2	3		1	1	3	2			47
	Uncertified	1			1	2									1			3
i. Common Infectious Diseases	Small-pox	...	...	...	...		...	...	...	...	...	...	...	...	...	...	...	
	Chicken-pox	...	...	...	...		...	...	...	...	...	...	...	..	...	...	...	
	Measles	...	...	...	...		...	1	...	...	...	...	...	...	..	...	...	1
	Scarlet Fever	...	...	...	...		...	...	...	...	...	...	...	...	...	...	...	
	Diphtheria (including Membranous Croup)	...	...	...	...		...	...	...	...	...	...	...	...	...	...	...	
	Whooping Cough	...	...	...	...		...	...	...	...	...	...	...	...	1	...	...	1
ii. Diarrhœal Diseases (See Notes to Table IV.)	Diarrhœa, all forms	...	...	...	...		...	...	...	...	...	...	...	...	...	...	...	
	Enteritis, Muco-enteritis, Gastro-enteritis	...	...	...	...		...	...	...	...	...	...	...	...	...	...	...	
	Gastritis, Gastro-intestinal Catarrh	...	...	...	...		...	...	...	...	...	...	...	...	...	...	...	
iii. Wasting Diseases	Premature Birth	6	2	...	1	9	...	1	...	1	...	...	...	...	...	...	...	11
	Congenital Defects (See Notes to Table IV.)	...	...	...	...		...	...	...	...	...	...	...	...	...	...	...	
	Injury at Birth	...	...	...	...		...	...	...	...	...	...	...	...	...	...	...	
	Want of Breast-milk, starvation	...	..	...	...		...	...	...	...	...	...	...	...	...	...	...	
	Atrophy, Debility, Marasmus	3	2	3	1	9	1	1	1	...	...	...	...	1	..	...	...	13
iv. Tuberculous Diseases	Tuberculous Meningitis (See Notes to Table IV)	...	...	...	...		...	...	...	...	..	...	...	1	...	...	...	1
	Tuberculous Peritonitis: Tabes Mesenterica	...	...	...	...		...	...	...	...	...	...	..	...	...	...	...	
	Other Tuberculous Diseases (See Notes to Table IV.)	...	...	...	...		...	...	...	..	.	...	...	...	...	..	...	
v. Other Causes	Erysipelas	...	...	...	...		...	...	...	...	...	...	...	...	..	...	...	
	Syphilis	...	...	...	...		...	...	...	...	...	...	...	...	...	...	...	
	Rickets	...	...	...	...		...	...	...	...	...	...	...	...	...	...	...	
	Meningitis (not Tuberculous)	...	...	...	...		...	...	...	...	...	...	..	...	...	...	...	
	Convulsions	...	...	1	...	1	...	1	...	2	...	...	...	1	2	...	...	7
	Bronchitis	...	...	...	...		4	1	1	...	...	...	1	...	...	...	...	7
	Laryngitis	...	...	...	...		...	...	...	...	...	...	...	...	...	...	...	
	Pneumonia	...	1	...	1	2	...	...	...	...	...	...	...	...	...	..	...	2
	Suffocation, overlying	...	1	...	...	1	...	...	...	...	...	...	...	...	..	...	...	1
	Other Causes	3	1	...	...	4	1	...	...	...	.	1	...	...	.	...	...	6
	TOTAL	12	7	4	3	26	6	5	2	3	...	1	1	3	3	...	...	50

District. RUNCORN RURAL.

Births in the year { legitimate 666 / illegitimate 25 }

Deaths in the year of { legitimate infants 50 / illegitimate infants nil }

Population. Estimated to middle of 1909. 25,721.

Deaths from all Causes at all Ages, 306

APPENDIX, OR TABLE, VI.

Table of Water Analyses, made during the Year 1909, by the County Analyst.

ALL RESULTS ARE EXPRESSED IN GRAINS PER GALLON.

1909. Description of Sample and Date when received	Appearance in Tube	Smell when heated to 100° F.	Total Solid Matter at 212° F.	Total Mineral Matter	Loss on ignition	Chlorine in Chlorides	Phosphoric Acid	Nitrogen in Nitrites	Nitrogen in Nitrates	Free Ammonia	Albuminoid Ammonia	Oxygen Absorbed 15 min. at 60°	Oxygen Absorbed 3 hours at 60°	Alkalinity	Soap destroyed by one gallon of the Water	Microscopical Examination of the Deposit	Poisonous Metals	General Remarks upon Sample
January 26th No. 1. No. 752 From Public Shallow, Dip Well in Goose Lane Hatton.	Clear	Nil	30·9	29·4	1·5	3·0	Nil	Nil	·47	·0042	·0077	Nil	Nil	9·2	Over 100	Nil	Nil	This is a very hard water from Lime and Magnesia Salts. — In other respects the water s good and may be used for domestic purposes.
January 26th. No 2 No. 753 From Pump and Well to Goose Lane Farm, Hatton. (Mr. S. Reid's)	Clear	Nil	90·9	82·4	8·5	10·5	Trace	Traces	2·6	·0035	·0012	·0056	·0196	2·5	Over 500	Nil	Nil	This is a very hard water from Lime and Magnesia Salts. This water contains a high amount of Nitrates which points to previous Sewage contamination, I do not consider this water fit for domestic use.
January 26th. No. 3 No. 754 From Pump and Well to Hatton Arms Inn, Hatton	Clear	Nil	36·0	33·9	2·1	3·0	Nil	Nil	·40	Nil	·0049	Nil	·0196	14·0	Over 29·2	Nil	Nil	This is a very hard water from Lime and Magnesia Salts, in other respects the water is good and may be used for domestic purposes.
January 26th. No 4 No. 755 From Pump and Well to 7 cottages in Hatton Village, owned by Mr. R. Hewitt.	Clear	Nil	32·5	31·5	1·0	4·0	Nil	Nil	Trace	·0014	·0077	·0392	·0888	12·0	Over 300	Nil	Nil	This is a very hard water from Lime and Magnesia Salts, in other respects the water is fairly good and may be used for domestic purposes.
February 16th No. 5 No. 756 From Pump and Well to Farm Premises off Walton Road, Hatton,— (The Exors. of the late Mr. W. Blackshaw)	Clear	Nil	43·0	40·7	2·3	3·75	Nil	Nil	·25	·0014	·0063	Nil	·0084	18·5	Over 300	Nil	Nil	This is a very hard water from Lime and Magnesia Salts, In other respects it is very good, and may be used for domestic purposes.
February 16th No. 6 No. 757 From Ram to private Residence off Walton Road, Hatton, (Mr John Whitney's)	Clear	Nil	24·0	23·1	·9	2·0	Nil	Nil	·25	Trace	·0042	·0056	·0196	4·0	Over 200	Nil	Nil	This is a hard water from Lime and Magnesia Salts —In other respects it is very good and may be used for domestic purposes
February 16th. No. 7 No. 758 From Pump and Well to Farm Premises in Goose Lane, Hatton. (Mr. W. Blackshaw's)	Clear	Nil	25·0	21.0	2·0	3·75	Nil	Nil	·19	Nil	·0042	·0056	·0196	3·4	Over 200	Nil	Nil	This is a hard water from Lime and Magnesia Salts —In other respects it is very good and may be used for domestic purposes.
February 16th No. 8 No 759 First Sample From Stand Pipe to Aston Hall, Aston. Supplied from spring in Land.	Clear	Nil	31·5	29·5	2·0	4·0	Nil	Nil	·52	Nil	·0035	Nil	Nil	8·0	Over 200	Nil	Nil	This is a hard water from Lime and Magnesia Salts.—In other respects it is a good water and fit for domestic purposes.
March 3rd. First Sample. No. 9 No. 760 From Pump and Well Grandsires Green Farm, Antrobus. (Mr.J. Moore's)	Clear	Nil	99·3	98·9	·4	17·5	—	Trace	·63	·0245	·0154	·042	·1092	21·0	—	Nil	Nil	This is a hard water from Lime and Magnesia Salts, —It also contains too much organic matter, I cannot recommend this water for domestic use.
April 1st. No. 10 No. 761 From Pump and Well to 6 Cottages near to Chapel, in Walton Road. Hatton, owned by Mr. James Parr	Clear	Nil	71·5	66·3	5·2	8·6	—	Nil	1·4	·0014	·0056	·025	·067	12·0	Over 400	Nil	Nil	This is a very hard water from Lime and Magnesia Salts. In other respects the water is fairly good and may be used for domestic purposes, if the user does not object to the hardness.
April 1st, No 11. No. 762 From running pipe to 14 Cottages off Walton Road, Hatton, owned by Mr. James Parr,	Clear	Nil	28·4	27·4	1·0	2·5	—	Nil	·4	Trace	·0049	·019	·056	11·5	—	Nil	Nil	This is a hard water from Lime and Magnesia Salts —In other respects the water is good and may be used for domestic purposes.
April 1st. No. 12 No. 763 From Pump and Well to Hatton Hall Hatton, owned and occupied by Mr. James Parr.	Clear	Nil	29·7	29·0	·7	3·0	—	Nil	Trace	Nil	·0049	·0056	·028	15.0	—	Trace of Iron.	Nil	This is a hard water from Lime and Magnesia Salts —In other respects the water is good and may be used for domestic purposes
April 1st. No. 13 No. 764 From Pump and Well to 4 Houses, off Walton Road, Hatton, owned by Mr. Robert Hewitt.	Clear	Nil	46·6	42·7	3·9	6·5	—	Nil	·7	Nil	·0042	·016	·042	11·0	—	Nil	Nil	This is a hard water from Lime and Magnesia Salts —In other respects the water is good and may be used for domestic purposes
April 29th. Second Sample No. 14. No. 765. From Pump and Well to Grandsire's Green Farm, Antrobus. (Mr. J. Moore's)	Clear	Nil	109 3	105·9	3·4	20	Nil	Nil	·15	·0021	·014	·0448	·1036	23·5	Over 600	Nil	Nil	This water is excessively hard from Lime and Magnesia Salts,—This is not a good water for general domestic use, and should not be used if better can be procured.
May 8th. No. 15 No. 766 From Shallow Dip Well in Garden to Farm premises, in Bartington. (Mr. P. Mountfield's)	Clear	Nil	30·4	29·1	1·3	2·0	Nil	Nil	·7	·0056	·00595	·02	·056	15·0	Over 250	Trace Organic	Nil	This is a hard water from Lime and Magnesia Salts —In other respects it is a good water and fit for domestic use.
July 14th. Third Sample. No. 16 No, 767 Pump and Well to Grandsires Green Farm, Antrobus. (Mr. J. Moore's)	Clear	Nil	113	104	9	20·0	Trace	Nil	1·6	·0014	·0196	·030	·095	26·5	Over 600	Trace of Organic	Nil	This is an exceedingly hard water from Lime and Magnesia Salts —It also contains too much organic matter, also shows signs of previous sewage contamination. In my opinion this water is not fit for domestic use.
August 6th. No. 17. No. 768 From Pump and Well to Small Farm, near School Bank, Norley (Mr. H. Richardson's)	Clear	Nil	47·9	45·9	2·0	10·0	Trace	Nil	1·4	·0056	·024	·143	·322	2·0	Total Ha'dn'ss 16·8 Ab't 200 Perm'nt 14·5	Nil	Nil	This is not a good water and in my opinion it is not fit for domestic use.
August 16th. First Sample. No. 18. No. 769 From Pump and Well to Farm Premises in Cow Lane, Norley. (Mrs. H. Newall's)	Clear	Nil	18·2	16·8	1·4	2·5	Traces	Nil	·3	·0014	·017	·061	·165	3·7	Total Ha'dn'ss 10·2 100 Perm'nt 6·5	Nil	Nil	This is not a good water still, before saying that it is not fit for domestic use, I should like another sample to be sent with full description of the surroundings.
August 6th. No. 19. No. 770 From Pump and Well to Moss Farm, off Finger Post Lane, Norley. (Mr J. Gerrard's)	Slight Yellow	Nil	47·2	45·0	2·2	4·7	Traces	Slight Trace	1·4	·0035	·024	·154	·355	5·5	Total Ha'dn'ss 23·4 Over 200 Perm'nt 18·2	Nil	Nil	This is not a good water, and in my opinion it is not fit for domestic use.
August 17th. Fourth Sample. No. 20. No. 771 From Pump and Well to Grandsires Green Farm Antrobus. (Mr. J. Moore's)	Clear	Nil	105·8	100·7	5·1	18·5	Trace	Trace	·65	Nil	·014	·047	·109	22·5 Total Ha'dn'ss 55·5	Over 500	Nil	Nil	This is such a very hard water I cannot recommend it for domestic use.
August 17th. Second Sample. No. 21. No. 772 From Stand Pipe to Aston Hall, Aston supplied from Spring in Land	Clear	Nil	36·5	33·7	2·8	3·5	Nil	Nil	·55	·0007	·0049	·0012	·0196	8·0 Total Ha'dn'ss 26·0	250	Nil	Nil	This is a hard water, but in other respects it is good and fit for domestic use.
October 9th No. 22 No. 773 From Pump and Well to Farm Premises in Cow	Slightly Yellow	Nil	20·8	19·4	1·4	2·5	Nil	Trace	·4	·0021	·0133	·0868	182	4·9	Over 100	Iron Oxide	Nil	This water, shows no improvement on the sample taken Aug. 6th 1909, —In my opinion this is not a good water and is not